Energy-charge equivalence and CP-problem.

ALBERTO MIRÓ MORÁN

albertomiro1991@gmail.com

ABSTRACT

Theories about Energy-charge equivalence could be the solution for the cp problem.

The problem due to difference between number of particles and antiparticles could have the basis of its solution in energy-charge equivalence theories.

To add a new variation[1] , I will say that based on one defined in terms of Planck units

$$E_{0electric} = \left(q_{0electric} \sqrt{\frac{1}{4\pi\varepsilon_0 G}} \right) c^2 \quad = \quad M_{0electric} c^2 \qquad (1)$$

$$E_{kinetic\ electric} = \boldsymbol{\gamma} v \left(q_{0electric} \sqrt{\frac{1}{4\pi\varepsilon_0 G}} \right) c \; = \; \boldsymbol{\gamma} v M_{0electric} c \; (1)$$

If we add these components to the mass-energy principle

For the motion of a particle of momentum p, mass M ,charge $q_{0electric}$ and velocity v.

$$E^2 = (p^2 + (\boldsymbol{\gamma} v M_{0electric})^2) c \; + (M^2 + (M_{0electric})^2) c^4 \; (1)$$

With previous equation we can change the principle of conservation of charge for one of conservation of energy and use it in cases of charge destruction or creation.

If we also add a new principle of conservation of linear momentum:

If $F_{ext} = 0$

$p + \boldsymbol{\gamma} v M_{0electric} = cte$

That is, we eliminate the need for antimatter in a necessary way for cases of destruction or creation of charged particles and we allow the creation of several particles of the same charge or their destruction in the frame of special relativity.

References

1 - On the Mass-Energy and Charge-Energy Equivalences Bulathsinghala, Dinesh

2- The equivalence of charge and energy D. P. Whitmire

This work is licensed under a Creative Commons Attribution 4.0 International License.